

ARNOLD ARBORETUM

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Chinese Cotoneasters. Cotoneasters are shrubs or rarely small trees of the Rosé Family, related to the Apples, Pears and Hawthorns. The genus has long been known in Europe and eastern Siberia, but it is only in recent years that it has been discovered that the largest number of species of these plants grows in China. The first Chinese species was known to botanists as early as 1832; forty-five years passed before another of these Chinese plants was recognized, and it was not until Henry and Wilson began the systematic exploration of the flora of central and western China that any one suspected its richness in these plants. Now forty-eight or fifty Chinese species and well marked varieties are recognized. Of those with deciduous leaves twenty-four are now well established in the Arboretum. Among them are some of the handsomest shrubs in cultivation, and for this climate at least some of the species are perhaps the most valuable shrubs introduced by Wilson. For the embellishment of northern gardens the introduction and successful cultivation of the Chinese Cotoneasters rank in importance with the improvements made in Europe in recent years in the garden Lilacs, with the forms of hybrid *Philadelphus* made by Lemoine, and with the collection of American Hawthorns discovered and raised in the last sixteen years through the activities of the Arboretum. Some of the Chinese Cotoneasters are low shrubs only a few inches high and admirably suited for the decoration of rock gardens; others are large broad bushes eight or ten feet high; and it is not possible to say which of these plants is the best for some of them are better suited for one purpose and some for another. On some species the leaves are small, thick, dark green and very lustrous; on others

they are thin and of different shades of green, and of different sizes. On some of the species with thick and lustrous leaves the foliage does not fall until the beginning or middle of winter; that of the larger-leaved species falls late in the autumn, on some species assuming in the fall brilliant shades of orange and scarlet. On some species the flowers are bright red, and white on others, and the lustrous fruit which varies greatly in size is black on some of these plants and red on others. As flowering plants the most beautiful in the Arboretum are *C. hupehensis*, *C. racemiflora*, var. *soongarica*, and *C. multiflora*, var. *calocarpa*. These three plants have flowers comparatively large for the genus, about half of an inch in diameter, and bright red shining fruits. The first is a broad, tall and shapely shrub with bright green leaves which will be covered in a few days with flowers which make the plant as conspicuous as any Spiraea. These are followed by small, scarlet fruits which are a good deal hidden by the leaves. *C. racemiflora*, var. *soongarica*, is also a large and vigorous shrub; the flowers are a little larger than those of *C. hupehensis*, the leaves are dull blue-green in color, and the fruit is larger and more showy than that of the last species. *C. multiflora*, var. *calocarpa*, is flowering for the first time in the Arboretum. It is a shrub with slender, gracefully arching stems and blue-green leaves. The arching of the stems makes the flowers, which are borne in erect clusters on short lateral branches, conspicuous and there is now in the Arboretum no shrub in flower more graceful in habit or more charming in the arrangement of its flowers. The fruit of this species, judging by specimens collected in China, is abundantly produced: it is scarlet and about a quarter of an inch in diameter. Of the large-growing species with thick lustrous leaves attention is called to *C. divaricata* with red fruit and *C. nitens* with black fruit. These species have small, globose red flowers which are now open and are large, fast-growing, hardy shrubs valuable through the summer and autumn on account of their beautiful foliage. None of the species are perhaps so attractive in the autumn as *C. foveolata*; this is one of the most vigorous of all the species with larger leaves which late in the season turn brilliant orange and scarlet. The flowers of this plant are red and the fruit is black. The best of the dwarf species in this climate is *C. horizontalis*. This is now the most generally known of the Chinese Cotoneasters, as it was first raised in France forty years ago and has been growing in the Arboretum for more than a quarter of a century. When growing naturally it is a plant not more than two feet high, with wide-spreading branches; it has small, dark green, shining leaves, minute red flowers and small bright red fruit. Here the leaves fall in early winter, but in regions of milder climate they remain on the branches until a new crop appears in the spring. This is an excellent plant for a large rock garden, and in Europe it is often trained to cover low walls, for which purpose it is well suited, although the branches do not naturally attach themselves to stone or brick. *C. horizontalis*, var. *perpusilla* is a dwarf form with rather smaller leaves and is equally useful

for the rock garden. This variety, Mr. Wilson tells us, is the common *Cotoneaster* of the moorlands of western Hupeh. *C. adpressa*, which is the dwarfest of these plants, is distinguished from *C. horizontalis* by its thinner and less lustrous leaves, larger fruit which ripens several weeks earlier, and by its creeping and often rooting stems which form a dense carpet closely appressed to the ground. There are few shrubs better suited for the rock garden. Most of the Chinese *Cotoneasters* are with the other new Chinese shrubs on the southern slope of Bussey Hill. On Hickory Path, near Centre Street, can be seen the largest plant of *C. horizontalis* in the Arboretum, several plants of *C. adpressa* and some other species.

Berberis verruculosa, an evergreen Barberry discovered by Wilson in western Szechuan, is flowering freely for the first time in the Arboretum. It is a small shrub with slender, arching stems, thickly covered with dark brown excrescences, small oval leaves dark green and very lustrous on the upper surface and pale below, and small golden yellow flowers which are solitary or produced in few-flowered clusters. The berries are black, oblong or bottle-shaped and covered with a glaucous bloom. On its native mountains this Barberry is said sometimes to grow three feet tall, but the plants in the Arboretum are only a few inches high. These plants have now been growing for several years on the exposed southern slope of Bussey Hill where they have never been injured. *Berberis verruculosa* appears to be the hardiest and for this climate it is probably the most valuable of the Chinese evergreen species. The small size and compact habit make it a good subject for the rock garden.

Aesculus discolor. It is fortunate that the scarlet-flowered variety (var. *mollis*) of this Buckeye is hardy here, for the flowers are not surpassed in brilliancy by the flowers of any other Horsechestnut. On the typical *Aesculus discolor* the flowers have a red calyx and yellow petals generally more or less flushed with rose. This is a much less common plant than the variety *mollis* on which both the calyx and the corolla are bright red. This is a very common plant in Georgia and Alabama and ranges west to southeastern Missouri and to eastern Texas. It is the only red-flowered Buckeye which has been found west of the Mississippi River, and it sometimes reaches the size and assumes the habit of a small tree. On the Edwards Plateau in western Texas there is a yellow-flowered form (var. *flavescens*) which, because it has yellow flowers, was long mistaken by botanists for the Appalachian tree Buckeye, *Aesculus octandra*. *Aesculus discolor* and its varieties can be distinguished from the other American species by the soft covering of pale down on the lower surface of the leaflets, and from all species of the genus except *Aesculus californica* by the pale orange-brown color of the seeds. *Aesculus discolor*, var. *mollis* is just coming into flower in the large bed in the rear of the Horsechestnut Group on the right-hand side of the Meadow Road. Here it is growing with several plants of

Aesculus georgiana. This shrub, which is a native of central Georgia, is covered again with its compact clusters of yellow and rose-colored flowers. Perfectly able apparently to support the New England climate, this Buckeye is one of the handsomest and most interesting southern shrubs which the Arboretum has made known and introduced into gardens.

Aesculus Briotii. This French form of the so-called red-flowered hybrid Horsechestnut (*Aesculus carnea*) is in flower in the Collection. It is the most brilliantly colored of all the forms of *Aesculus carnea*, and few trees hardy in this climate bear such showy flowers. It begins to flower when not more than ten feet high; it is perfectly hardy, and it should be seen more generally in American gardens.

Daphnes. Three white-flowered Daphnes are now in flower on Azalea Path, *D. alpina* from the mountains of central Europe, *D. caucasica* from the Caucasus, and *D. altaica* from the mountains of southern Siberia. They are small, erect-growing shrubs with narrow leaves. *D. alpina* may be distinguished from the others by the downy covering on the lower surface of the young leaves and on the young branchlets. The others are perhaps only geographical forms of one species, but the flowers of *D. altaica* are very fragrant, and those of *D. caucasica* have a disagreeable odor.

American Magnolias. Several of these plants can now be seen in flower in the Magnolia Group on the right-hand side of the Jamaica Plain entrance; those already in flower are *M. Fraseri*, *M. cordata*, *M. acuminata* and *M. tripetala*. *M. macrophylla*, *M. glauca* and the hybrid *M. Thompsoniana* will not open their flower-buds until later.

Diervilla florida, var. venusta. The specimen of this Korean plant on Hickory Path, near Centre Street, is now covered with large deep rose colored flowers and is one of the most strikingly beautiful objects in the Arboretum. As a flowering plant it is doubtful if any other species or any of the numerous hybrids in this genus equals this in beauty.

An illustrated guide to the Arboretum containing a map showing the position of the different groups of plants has recently been published. It will be found useful to persons unfamiliar with the Arboretum. Copies of this guide can be obtained at the Administration Building in the Arboretum, from the Secretary of the Massachusetts Horticultural Society, 300 Massachusetts Avenue, Boston, from The Houghton, Mifflin Company, 4 Park Street, Boston, and at the office of the Harvard Alumni Bulletin, 50 State Street, Boston. Price, 30 cents.

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